7.0 Excess Emissions Documentation

Permit Condition 2.7 of the current Tier II Operating Permit 011-00013 requires that the permittee comply with the requirements of IDAPA 58.01.01.130-136 for startup, shutdown, scheduled maintenance, safety measures, upset, and breakdowns. This section is fairly self-explanatory. Idaho Supreme notes the following:

Subsections 133.02, 133.03, 134.04, and 134.05 are not specifically included in the Tier II permit as applicable requirements. These provisions of the *Rules* only apply if the permittee anticipates requesting consideration under subsection 131.02 of the *Rules* to allow DEQ to determine if an enforcement action to impose penalties is warranted. Section 131.01 states "*. . . The owner or operator of a facility or emissions unit generating excess emissions shall comply with Sections 131, 132, 133.01, 134.01, 134.02, 134.03, 135, and 136, as applicable. If the owner or operator anticipates requesting consideration under Subsection 131.02, then the owner or operator shall also comply with the applicable provisions of Subsections 133.02, 133.03, 134.04, and 134.05.*" Failure to prepare or file procedures pursuant to sections 133.02 and 134.04 is not a violation of the *Rules* in and of itself, as stated in subsections 133.03.a and 134.06.b. Therefore, since the permittee has the option to follow the procedures in subsections 133.02, 133.03, 134.04, and 134.05; and is not compelled to, the subsections are not considered applicable requirements for the purpose of this permit and are not included as such.

To date Idaho Supreme has not observed or recorded excess emissions. Should excess emissions occur in the future, Idaho Supreme will address them as appropriate in accordance with the regulations. In section 9.0, Compliance Demonstration and Certification, excess emissions documentation and reporting are discussed in more detail for each applicable Tier II permit condition.

8.0 Ambient Air Impact Analysis

An ambient impact analysis was performed for the Tier II Operating Permit 011-00013. Because there are no changes in emissions, no new modeling needs to be performed. The original modeling report is included in this section; however, the modeling files (Appendix C of the original modeling report) are not included. The files will be provided to IDEQ upon request.

AIR DISPERSION MODELING
for
IDAHO SUPREME POTATOES, INC.
FIRTH FACILITY

August 24, 2001

Prepared for:

Idaho Supreme Potatoes, Inc.
P.O. Box 70
Firth, ID 83236-0246

&

State of Idaho
Department of Environmental Quality
1410 N. Hilton
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Prepared by:

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1.0 ENVIRONMENTAL EVALUATION

This environmental evaluation submitted by Idaho Supreme Potatoes, Inc. (IDSUP) to the State of Idaho, Department of Environmental Quality (IDEQ) defines the estimated ambient air quality impact form the proposed IDSUP Firth facility. This dehydrating potato processing facility is located in central Bingham County, Idaho. Bingham County is currently attainment for all criteria pollutants. IDSUP is submitting an application for a modification to their Tier II permit concurrently with this evaluation.

Facility characteristics, emission unit source information, and meteorological data used are described in the following sections. The input characteristics for the air dispersion model are identified, as well as the ambient air standards in which this modeling will show compliance. The modeling approach, receptor grid evaluation, and fence line designation are also discussed in this environmental evaluation. JBR Environmental (JBR) is performing this modeling effort for IDSUP's operations. JBR has discussed this approach and preferred modeling parameters with IDEQ officials prior to submitting this modeling report.

2.0 SUMMARY OF REQUIRED INFORMATION

IDSUP's Firth facility site is located at the corner of Highway 91 and 800 North, Goshen Highway, less than 1 mile northeast of Firth. Air Quality Control Region 61 surrounding Firth (Bingham Co.)is attainment for all criteria pollutants. Bannock County, to the south is designated as non-attainment for particulate matter 10 microns in diameter or less (PM_{10}.) The UTM coordinates of this facility are UTMN: 4795^{900}, UTME 404^{800}, in Zone 12.

2.1 Emission Units

All point and stationary insignificant sources are modeled in this evaluation. All emission units are characterized in the model using their maximum production rate capacity. Please see the Tier II permit application for operating restrictions, such as, in hours of operation or fuel rate.

The main criteria pollutants released from this facility are PM_{10} and sulfur dioxides SO_2. Other criteria pollutants emitted from this facility consist of nitrogen oxides ($N0_x$) carbon monoxides (CO), and volatile organic compounds (VOC). All pollutants are emitted from either the processing of potatoes or the combustion of fuel from boilers, dyers, fluidized bed, or space heaters. Emission factors for PM_{10} , NOx, SO_2, and CO are based on EPA's Compilation of Air Pollution Factors, 5^{th} Edition, Version 7, November 1999. VOCs do not have a modeling standard and were not modeled in this evaluation. See Table 2.1-1 for pollutant emission rates used in this evaluation

In addition, IDEQ requires air toxics to be evaluated in this modeling effort. JBR has identified arsenic, cadmium, hexavalent chromium (Cr+6), formaldehyde (HCOH), and nickel as the toxics that exceed the emissions level (EL)[1] and require modeling for comparison to the Acceptable

[1] These exceed the AACC using SCREEN3 evaluation, too, necessitating the use of ISCST3 modeling.

Ambient Concentrations for Carcinogens (AACC) in IDAPA 58.01.01. 586. See Table 2.1-2 for emission rates for toxics, based on AP-42 Table 3.4-3 and 3.4-4 emission factors.

Table 2.1-1
Criteria Emission Rates

Source	PM (g/s)	*PM-10 (g/s)	SO2 (g/s)	CO (g/s)	NOx (g/s)
Fluidized Bed Dryer	0.20	0.09	0.001	0.07	0.14
#4 Bigelow Boiler	0.82	0.82	6.43	1.43	3.85
#3 Cleaver Brooks	0.25	0.25	1.98	0.45	1.18
Secondary Dryer (1st vent)	0.0003	0.0003	0.0000	0.0028	0.0033
Secondary Dryer (2nd vent)	0.0003	0.0003	0.0000	0.0028	0.0033
Secondary Dryer (1st vent)	1.07E-01	4.71E-02			
Secondary Dryer (2nd vent)	1.07E-01	4.71E-02			
Silo Storage A	8.06E-03	8.06E-03			
Silo Storage B	8.06E-03	8.06E-03			
Silo Storage C	8.06E-03	8.06E-03			
Silo Storage D	8.06E-03	8.06E-03			
Silo Storage E	8.06E-03	8.06E-03			
Silo Storage F	8.06E-03	8.06E-03			
Silo Storage G	8.06E-03	8.06E-03			
Silo Storage H	8.06E-03	8.06E-03			
Silo Storage I	8.06E-03	8.06E-03			
Silo Storage J	8.06E-03	8.06E-03			
Flaker #4	1.07E-01	4.71E-02			
Flaker #3	1.07E-01	4.71E-02			
Flaker #2	1.07E-01	4.71E-02			
Flaker #1	1.07E-01	4.71E-02			
Flaker #8	1.07E-01	4.71E-02			
Flaker #7	1.07E-01	4.71E-02			
Flaker #6	1.07E-01	4.71E-02			
Flaker #5	1.07E-01	4.71E-02			
Flaker #10	1.07E-01	4.71E-02			

Flaker #9	1.07E-01	4.71E-02			
Flaker #12	1.07E-01	4.71E-02			
Flaker #11	1.07E-01	4.71E-02			
Dryer Stage A	1.07E-01	4.71E-02			
Dryer Stage B	1.07E-01	4.71E-02			
Dryer Stage C	1.07E-01	4.71E-02			
Dryer Stage A	0.007	0.007	0.001	0.081	0.097
Dryer Stage B	0.003	0.003	0.000	0.033	0.039
Dryer Stage C	0.003	0.003	0.000	0.033	0.039
Space Heater South	7.69E-03	7.69E-03	6.07E-04	8.50E-02	1.01E-01
Space Heater North	7.69E-03	7.69E-03	6.07E-04	8.50E-02	1.01E-01
Space Heater East	1.44E-02	1.44E-02	1.13E-03	1.59E-01	1.89E-01

Table 2.1-2
Toxic Emission Rates

Source	Arsenic (g/s)	Cadmium (g/s)	HCOH (g/s)	Nickel (g/s)	Chromium+6 (g/s)
Fluidized Bed Dryer	1.72E-07	9.45E-07	6.44E-05	1.80E-06	0.00E+00
#4 Bigelow Boiler	9.17E-05	3.30E-08	2.30E-03	5.88E-03	2.03E-05
#3 Cleaver Brooks	2.82E-05	1.02E-08	7.08E-04	1.81E-03	6.26E-06
Secondary Dryer (1st vent)	7.12E-09	3.92E-08	2.67E-06	7.47E-08	0.00E+00
Secondary Dryer (2nd vent)	7.12E-09	3.92E-08	2.67E-06	7.47E-08	0.00E+00
Dryer Stage A	2.07E-07	1.14E-06	7.76E-05	2.17E-06	0.00E+00
Dryer Stage B	8.28E-08	4.55E-07	3.11E-05	8.69E-07	0.00E+00
Dryer Stage C	8.28E-08	4.55E-07	3.11E-05	8.69E-07	0.00E+00
Space Heater South	2.14E-07	1.17E-06	8.01E-05	2.24E-06	0.00E+00
Space Heater North	2.14E-07	1.17E-06	8.01E-05	2.24E-06	0.00E+00
Space Heater East	3.99E-07	2.19E-06	1.49E-04	4.18E-06	0.00E+00

Please see the permit application for specific model types and nomenclature. Additional information on stack parameters and building dimensions are found in Appendix A. There are 34 emission units. The 3 sets of space heaters are modeled as 3 volume sources. Of the remaining 31 emission unit point sources, the secondary dryers (1st and 2nd vent) share common stacks and the Dyer Stage A, Stage B, and Stage C also shared stacks. There are 10 storage silos, 12 flakers, 2 boilers, and one (1) fluidized bed. Thus, of the 34 emission units, there are 31 emission points and 3 volume sources

Fuel used for the space heaters is exclusively natural gas or propane. Fuels used in the dyers dryers and fluidized beds are powered by natural gas or propane. The two boilers modeled used the worst case emissions per pollutant, based on the fuel. Fuel types that were evaluated include: residual fuel, #2 diesel, natural gas, and propane. Table 2.1-3 shows the stack parameters and fuel usage for the point and volume sources.

Table 2.1-3

STACK PARAMETERS

Source	Stack Height (m)	Temp (K)	Exit Velocity (acfm)	Stack Diameter (m)
Fluidized Bed Dryer	8.60	321.00	26,000	0.43
#4 Bigelow Boiler	12.29	463.56	32,000	0.91
#3 Cleaver Brooks	9.68	560.78	13,000	0.88
Secondary Dryer (1st vent)	7.68	293.00	7,000	0.76
Secondary Dryer (2nd vent)	7.68	293.00	7,000	0.76
Silo Storage A	22.43	293.00	750	5" X 10.5"
Silo Storage B	22.43	293.00	750	5" X 10.5"
Silo Storage C	22.43	293.00	750	5" X 10.5"
Silo Storage D	22.43	293.00	750	5" X 10.5"
Silo Storage E	22.43	293.00	750	5" X 10.5"
Silo Storage F	22.43	293.00	750	5" X 10.5"
Silo Storage G	22.43	293.00	750	5" X 10.5"
Silo Storage H	22.43	293.00	750	5" X 10.5"
Silo Storage I	22.43	293.00	750	5" X 10.5"
Silo Storage J	22.43	293.00	750	5" X 10.5"
Flaker #4	7.37	293.00	11,039	1.14

Flaker #3	7.37	293.00	9,935	1.14
Flaker #2	7.37	293.00	9,935	1.14
Flaker #1	7.37	293.00	9,935	1.14
Flaker #8	8.29	293.00	16,190	0.76
Flaker #7	8.29	293.00	9,812	0.76
Flaker #6	8.29	293.00	10,793	0.76
Flaker #5	7.68	293.00	10,333	0.63
Flaker #10	9.83	293.00	10,000	0.61
Flaker #9	9.83	293.00	10,625	0.61
Flaker #12	9.83	293.00	10,000	0.61
Flaker #11	9.83	293.00	8,750	0.61
Dryer Stage A	7.99	366.33	8,500	0.70
Dryer Stage B	7.99	366.33	7,500	0.70
Dryer Stage C	7.99	366.33	8,500	0.70
Space Heater South	7.62	310.78	70,000NA	
Space Heater North	7.62	310.78	70,000NA	
Space Heater East	7.62	310.78	130,000NA	

2.2 METEOROLOGICAL DATA

The meteorological data set (METdata) used for this National Ambient Air Quality Standards (NAAQS) evaluation was supplied to IDSUP by IDEQ. The 1987 through 1991 Pocatello METdata sets were collected between 1987 and 1991 was at a site approximately 23 miles to the south. The upper air station for the METdata set is registered as station 24127 (Idaho Falls) and the surface air station is designated as 24156 (Pocatello). The windrose of these METdata sets show prevailing winds are from the southwest.

2.3 AMBIENT AIR STANDARDS

The air dispersion modeling effort compares IDSUP's impact on the surrounding area with the IDEQ standards. Specific to Idaho, the PM_{10} impact will be compared to the 1st High Average for 24-Hour and Annual Averages. The NO_2 Annual Average, 1st high, will be compared to this facility's impact, but modeled as NOx (oxides of nitrogen). Emission impacts for SO_2 will be compared to the 1st High for the 3-Hour, 24-Hour, and Annual Averages. CO comparisons will be made for the 8-Hour and 1-Hour Averaging standards. Ozone will not be evaluated by modeling. Air toxics that exceed the EL will be compared to the AACC established by IDEQ and are based on an Annual Averaging level.

No Class I areas within 100 kilometers of the facility were identified in this environmental evaluation. Ambient air background levels applicable to this area were added to the air dispersion model output for comparison to the IDEQ standards and NAAQS. Background concentrations used in this modeling, as prescribed by IDEQ, are shown in Table 2.3-1.

Table 2.3-1. Air Pollutant Evaluation Averaging Periods

POLLUTANT	Averaging Period	Background Concentration (ug/M^3)
PM_{10}	Annual 24-Hour	95.0 26.0
NO_2	Annual	40.0
SO_2	Annual 24-Hour 3-Hour	23.5 144.0 545.0
CO	8-Hour 1-Hour	5,130.0 11,450.0
Toxics Arsenic, Cadmium, Hexavalent Chromium, HOCH, and Nickel	Annual	0.0

2.4 AIR DISPERSION MODELS

The air dispersion model used to evaluate emissions from this facility will be the Environmental Protection Agency's Industrial Source Complex Short Term, version 3 (ISCST3) model. The model used has an EPA issue date of 00101. JBR uses the packaged ISCST3 model referred to as Trinity's Breeze® ISC Suite V3.4.2, which has a release date of September 1, 2000.

2.4.1 Modeling Parameters

Modeling parameters used to approximate the emissions, terrain, and METdata are listed below in Table 2.4.1-1.

Table 2.4.1-1. Air Dispersion Modeling Settings

Parameter	Setting
Dispersion	Rural, by Concentration
Anemometer Height	10 Meters

Parameter	Setting
Receptor Height	0 Meters
Fence Line (Receptor) Boundary	Property Line as indicated Site Map in Appendix B
Terrain, Coordinates	Elevated, Normalized UTM Coordinates
Receptor Grid(s)	500 Meters (interval) for ROI 100 Meters for Coarse Grid 25 Meter for Refine Grid
Regulatory Options	Stack tip Downwash, Building Downwash (BPIP), Regulatory Default Options
Dispersion Output	Concentrations (ug/m^3)
PRIME Option	Not Used

2.4.2 Modeling Approach

The approach taken with this modeling effort was to build the model using the emission rates from shown in Table 2.1-1 and 2.1-2. Emission temperatures and exit velocities identified by IDSUP and manufacturer's data were used. Additional stack parameters, building dimensions, and fence line locations were appropriated from facility provided information. Terrain elevations were determined by interpolating the Firth, Idaho USGS 7 ½ minute topography maps and site plan surveys. See Appendices A and B for building dimensions, fence line, site map and USGS map.

Once all modeling parameters were entered into the air dispersion model, a polar grid was used to estimate the Radius of Significant Impact (ROI). Flat terrain was used for determining the ROI. The ROI distance determined from this model is based on the PM_{10} – 24 Hour Average has the largest impact, the ROI was applied for all pollutants. The ROI was determined to be approximately 3,000 meters.

2.4.3 Receptors and File Names

A coarse grid was extended from the facility fence line out to the ROI. The first 500-meter-interval (500 x 500) grid identified areas of prominent impact. The second set of grids were of a interval of 100 x 100-meters. Elevated terrain receptors were placed at each interval to help determine specific areas that have the most significant impact from this facility. The refined grids (25 x 25-meter grids or less) were placed encompassing the 1st High coarse grid receptors and all receptors adjacent to the local 1st Highs. The modeling output files for this evaluation incorporate the coarse and fine grids.

UTM coordinates for this effort were normalized on the south east corner of the property. UTM $N = 4795^{900} = 0.0$, and UTM $E = 404^{800} = 0.0$. This normalization was done to better locate the highest area of ambient impacts. The site map in Appendix B indicates the UTMN, UTME

center point. Table 2.4.3-1 identifies the computer modeling file names that are included in the electronic submittal. Computer input files for this evaluation end in the suffix; '* .DAT', output files labeled '*.LST', and downwash files end in '*.WAK'.

Table 2.4.3-1. Computer Modeling File Names

File Name	Evaluation
ID_N0x_87, ID_N0x_88, ID_N0x_89, ID_N0x_90, ID_N0x_91	N0x - Annual Average
ID_PM_87, ID_PM_88, ID_PM_89, ID_PM_90, ID_PM_91	PM_{10} -24-Hour and Annual Averages
ID_S02_87, ID_ S02_88, ID_ S02_89, ID_ S02_90, ID_ S02_91	SO2 - 3-Hour, 24-Hour, and Annual Averages
ID_CO_87, ID_ CO_88, ID_ CO_89, ID_ CO_90, ID_ CO_91	CO – 1-Hour and 8-Hour Averages
ID_AS_87, ID_AS_88, ID_AS_89, ID_AS_90, ID_AS_91	Benzene Annual Average
ID_CD_87, ID_CD_88, ID_CD_89, ID_CD_90, ID_CD_91	Benzo(a)pyrene Annual Average
ID_HCOH_87, ID_HCOH_88, ID_HCOH_89, ID_HCOH_90, ID_HCOH_91	Formaldehyde Annual Average

ID_Cr6_87, ID_Cr6_88, ID_Cr6_89, ID_Cr6_90, ID_Cr6_91	Chromium +6 Annual Average
ID_Ni_87, ID_Ni_88, ID_Ni_89, ID_Ni_90, ID_Ni_91	Nickel Annual Average
ID_ ROI	Radius of Significant Impact

3.0 RESULTS

Results from this environmental evaluation are presented in the enclosed computer disk in their full EPA ISCST3 electronic format. The standard input file for this modeling effort is found in Appendix C. The polar ROI, course, and refine receptor grids, along with the property boundary and site map, are also located in Appendices B and C. The following table identifies the air pollutant, METdata year of maximum input, averaging period, maximum ambient air impact, receptor location, IDEQ background concentration, and the IDEQ AAQS. The air dispersion modeling is based on 365 days of meteorological data and 365 days of emissions. Results of the air dispersion model, using the current configuration of the plant and the proposed fuel usage are reported in Table 3.0-1. Comparing these results to the National Ambient Air Standards,

Table 3.0-1. Air Dispersion Modeling Results - Current

Pollutant / (MET data Year)	Averaging Period	Result (ug/M^3)	Location (UTME, UTMN)	Background (ug/M^3)	Result + Background (ug/M^3)	IDEQ AAQS (or AACC) (ug/M^3)
NOx / (1989)	Annual	10.32	305, 200	40	50.32	100
PM_{10} / (1991)	24-Hour	50.51	15, 225	95	145.5	150
PM_{10} / (1988)	Annual	9.67	45, 270	26	35.67	50
SO_2 / (1989)	3-Hour	342.48	240,0.0	545	887.5	1,300
SO_2 / (1989)	24-Hour	98.91	260, 65	144	242.9	365
SO_2 / (1989)	Annual	8.55	260, 50	23.5	32.05	80
CO / (1989)	1-Hour	-401.1	-260, 50	11,450	-11,851.1	40,000
CO / (1989)	8-Hour	-117.1	-105, 105	5,130	-5,247.1	10,000
Arsenic/(1989)	Annual	0.00013	260, 50	-------	0.00013	0.00023
Cadmium / (1988, 89, 90,	Annual	0.00008	305, 200-	-------	0.00008-	0.00056

91)						
Chromium +6 (1989)	Annual	0.00003	260, 50	-------	0.00003	0.000083
HCOH / (1989)	Annual	0.0074	305, 200	-------	0.00739	0.077
Nickel (1989)	Annual	0.0082	260, 50	-------	0.0082 Out of Compliance	0.0042

The largest emitters of SO_2 and toxics are from the boiler systems, burning residual fuel. The largest contributors to PM_{10} impacts are from the flaker lines. Using 66 feet for the Bigelow Boiler (BB #4) and 36 feet for the Cleaver-Brooks (CB#3) boiler shows compliance with the criteria pollutant standards. In addition, curtailed annual hours of operation (3185 hrs/yr) are proposed for the Cleaver-Brooks boiler (CB#3); because toxics are evaluated on a annual basis, the curtailed annual emissions were entered into the air dispersion model for evaluation.

4.0 SUMMARY

JBR Environmental discussed the air dispersion modeling approach, background concentrations, and evaluation prior to this submittal, with IDEQ. All applicable NAAQS and State of Idaho standards were used to determine regulatory compliance. EPA-approved air dispersion models and 5 years of IDEQ approved METdata was used to determine these ambient air impacts. Permit and facility-supplied information were used to represent emission parameters for this regulatory effort. A systematic approach was used to find the local 1st highs for each pollutant using actual terrain elevation. Background levels were added to the modeling results and compared to Idaho and NAAQS limits. All applicable criteria and toxic pollutants were evaluated. NAAQS and the State of Idaho's standards were determined not to exceed the limits identified in the Rules for the Control of Air Pollutants in Idaho, IDAPA 58.01.01.577 for criteria pollutants, nor the toxics.

Appendix A

IDEQ Modeling Checklist

Idaho DEQ Air Dispersion Modeling Checklist

As a requirement of the air permitting process, an air dispersion modeling analysis (screening and/or refined) must be conducted. Air dispersion models are used to predict the potential impact something may have on the air shed in which it is located. This checklist will aid in collecting all of the necessary information to perform a complete modeling analysis. The EPA Guideline on Air Quality Models and the DEQ Modeling Protocol should be used as a reference to ensure that the modeling techniques used will meet federal and state approval. Please include computer disk copies of the DOS versions of input and output files sufficient for DEQ to reproduce model runs. Copies of the meteorological data files used and all building information should also be included. A scaled plot plan showing the location of all structures needs to be submitted as part of the permitting application.

It is important that the **most recent model versions** be utilized in any analysis.

1. Name of Applicant/ Company: Idaho Supreme Potatoes, Inc.

Facility Description: Dehydrated potato processing plant
Located at the corner of Highway 91 and 800 North
Goshen Highway, Firth, Idaho

Dispersion Model(s) Used: EPA ISCST3 (00101)
Issue date September 1, 2000, Trinity Consultants, Inc.
Breeze ISC Suite 3.4.2

2. Source Classification:

Number of Point Sources (Section 3) 31

Number of Area Sources (Section 4) ____

Number of Volume Sources (Section 5) 3

3. Stack/Point Source Parameters (please include for each stack/point source modeled). List the **Maximum** Emissions Rate(s) for each pollutant. NOTE: If the stack is not circular, use equivalent dimensions determined by AREA = $\pi d^2/4$, where d is the inner stack diameter.

Source Fluidized Bed :

PM_{10} 0.714 $PM_{2.5}$ _____ NO_x 1.11 SO_2 7.9 E-3 CO 0.555 VOC _____

Toxic(s) (Please List): arsenic (1.35 E-6); cadmium (7.5 E-6); HOCH (5.11E-4); nickel (1.42 E-5)

Stack Height 8.60 m Stack Diameter 1.04 m Stack Temperature 321 K

Stack Exit Velocity 14.4 m/s and/ or **Actual** Stack Flow Rate 26,000 acfm

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Source Bigelow Boiler #4 :

PM_{10} 6.50 lbs/yr $PM_{2.5}$ _____ NO_x 30.55 SO_2 51.03 CO 11.35 VOC _____

Toxic(s) (Please List): arsenic (7.28 E-4); cadmium (2.62 E-7); Cr^{+6} (1.61. E-4); HOCH (1.82 E-2); Nickel (4.67 E-2)

Stack Height 12.29 m Stack Diameter 0.91 m Stack Temperature 463.56 K

Stack Exit Velocity 23.22 m/s and/ or **Actual** Stack Flow Rate 32,000 acfm

---

Source Cleaver-Brooks #3:

PM_{10} 1.98 Lbs/yr $PM_{2.5}$ _____ NO_x 9.36 SO_2 15.71 CO 3.57 VOC ___

Toxic(s) (Please List): arsenic (2.24 E-4); cadmium (8.09 E-8); Cr^{+6} (4.97 E-5); HCOH (5.62 E-3); nickel (1.44 E-2)

Stack Height 10.36 m Stack Diameter 0.88 m Stack Temperature 568.8 K

Stack Exit Velocity 10.08 m/s and/ or **Actual** Stack Flow Rate 13,000 acfm

3. Stack/Point Source Parameters (please include for each stack/point source modeled). List the **Maximum** Emissions Rate(s) for each pollutant. NOTE: If the stack is not circular, use equivalent dimensions determined by AREA = $\pi d^2/4$, where d is the inner stack diameter.

Source Dryer Stage A :

PM_{10} 0.43 $PM_{2.5}$ _____ NO_x 0.77 SO_2 7.94 E-3 CO 0.64 VOC _____

Toxic(s) (Please List): arsenic (1.64 E-6); cadmium (9.05 E-6); HOCH (6.16 E-4); nickel (1.72 E-5)

Stack Height 8 m Stack Diameter 0.7 m Stack Temperature 366.3 K

Stack Exit Velocity 10.42 m/s and/ or **Actual** Stack Flow Rate 8,500 acfm

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Source Dryer Stage B :

PM_{10} 0.397 $PM_{2.5}$ _____ NO_x 0.31 SO_2 7.94 E-5 CO 0.26 VOC _____

Toxic(s) (Please List): Arsenic (6.53 E-7); Cadmium (3.61 E-6); HCOH (2.47 E-4); Nickel (6.9 E-6)

Stack Height 8 m Stack Diameter 0.7 Stack Temperature 366.3 K

ck Exit Velocity 9.20 m/s and/ or **Actual** Stack Flow Rate 7500

Source Dryer Stage C :

PM_{10} 0.397 $PM_{2.5}$ _____ NO_x 0.31 SO_2 7.94 E-5 CO 0.26 VOC _____

Toxic(s) (Please List): Arsenic (6.57 E-7); Cadmium (3.61 E-6); HOCH (2.47 E-4); Nickel (6.9 E-6)

Stack Height 8 m Stack Diameter 0.7 m Stack Temperature 316.3 K

Stack Exit Velocity 10.42 and/ or **Actual** Stack Flow Rate 8500

3. Stack/Point Source Parameters (please include for each stack/point source modeled). List the **Maximum** Emissions Rate(s) for each pollutant. NOTE: If the stack is not circular, use equivalent dimensions determined by AREA = $\pi d^2/4$, where d is the inner stack diameter.

Source Secondary Dryer (1st vent):

PM_{10} 0.376 $PM_{2.5}$ _____ NO_x 2.62 E-2 SO_2 0.0 CO 2.22 E-2 VOC _____

Toxic(s) (Please List): Arsenic (5.65 E-8); Cadmium (3.11 E-7); HOCH (2.12 E-5); Nickel (5.93 E-7)

Stack Height 7.68 m Stack Diameter 0.76 m Stack Temperature 293.15 K

Stack Exit Velocity 7.28 m/s and/ or **Actual** Stack Flow Rate 7000 acfm

---

Source Secondary Dryer (2nd vent):

PM_{10} 0.376 $PM_{2.5}$ _____ NO_x 2.62 E-2 SO_2 0.0 CO 2.22 E-2 VOC _____

Toxic(s) (Please List): Arsenic (5.65 E-8); Cadmium (3.11 E-7); HOCH (5.93 E-7); Nickel (5.928 E-7)

Stack Height 7.68 m Stack Diameter 0.76 Stack Temperature 293.15 K

Stack Exit Velocity 7.28 m/s and/ or **Actual** Stack Flow Rate 7000 acfm

---

Source Silo Storage A-J (10 units):

EACH

PM_{10} 6.4 E-2 $PM_{2.5}$ _____ NO_x _____ SO_2 _____ CO _____ VOC _____

Toxic(s) (Please List): _____

Stack Height 22.43 m Stack Diameter 0.24 m Stack Temperature 366.48 K

Stack Exit Velocity 7.58 m/s and/ or **Actual** Stack Flow Rate 750 afcm

3. Stack/Point Source Parameters (please include for each stack/point source modeled). List the **Maximum** Emissions Rate(s) for each pollutant. NOTE: If the stack is not circular, use equivalent dimensions determined by AREA = $\pi d^2/4$, where d is the inner stack diameter.

Source Flakers # (1-4) :

PM_{10} 0.374 $PM_{2.5}$ _____ NO_x _____ SO_2 _____ CO _____ VOC _____

Toxic(s) (Please List): _____

Stack Height 9.83 m Stack Diameter 1.14 m Stack Temperature 293

Stack Exit Velocity 16.1 m/s and/ or **Actual** Stack Flow Rate 9,935; 9,935; 9,935, 11,039

Source Flaker #5 :

PM_{10} 0.374 $PM_{2.5}$ _____ NO_x _____ SO_2 _____ CO _____ VOC _____

Toxic(s) (Please List): _____

Stack Height 7.68 m Stack Diameter 0.63 m Stack Temperature 293 K

Stack Exit Velocity 15.64 m/s and/ or **Actual** Stack Flow Rate 10,333 acfm

---

Source Flakers 6-8 :

PM_{10} 0.374 $PM_{2.5}$ _____ NO_x _____ SO_2 _____ CO _____ VOC _____

Toxic(s) (Please List): _____

Stack Height 8.29 m Stack Diameter 0.76 m Stack Temperature 293 K

Stack Exit Velocity 11.00 m/s and/ or **Actual** Stack Flow Rate 10,793; 9,812; 16,190

3. Stack/Point Source Parameters (please include for each stack/point source modeled). List the **Maximum** Emissions Rate(s) for each pollutant. NOTE: If the stack is not circular, use equivalent dimensions determined by AREA = $\pi d^2/4$, where d is the inner stack diameter.

Source Flakers 9-12 :

PM_{10} 0.374 $PM_{2.5}$ _____ NO_x _____ SO_2 _____ CO _____ VOC _____

Toxic(s) (Please List): _____

Stack Height 9.83 m Stack Diameter 0.61 m Stack Temperature 293 K

Stack Exit Velocity 16 m/s and/ or **Actual** Stack Flow Rate 10,625; 10,000; 8,750; 10,000

Source _____:

PM_{10} _____ $PM_{2.5}$ _____ NO_x _____ SO_2 _____ CO _____ VOC _____

Toxic(s) (Please List): _____

Stack Height _____ Stack Diameter _____ Stack Temperature _____

Stack Exit Velocity _____ and/ or **Actual** Stack Flow Rate _____

Source _____:

PM_{10} _____ $PM_{2.5}$ _____ NO_x _____ SO_2 _____ CO _____ VOC _____

Toxic(s) (Please List): _____

Stack Height _____ Stack Diameter _____ Stack Temperature _____

Stack Exit Velocity _____ and/ or **Actual** Stack Flow Rate _____

4. Area Source Parameters (please include for each area source modeled). List the **Maximum** Emissions Rate(s) for each pollutant.

Source_____:

PM_{10} _____ $PM_{2.5}$ _____ NO_x _____ SO_2 _____ CO_____ VOC _____

Toxic(s) (Please List):_____

Source Height _____ Easterly Dimension _____ Northerly Dimension _____

Initial Vertical Dimension _____ Angle from North _____

Source_____:

PM_{10} _____ $PM_{2.5}$ _____ NO_x _____ SO_2 _____ CO_____ VOC _____

Toxic(s) (Please List):_____

Source Height _____ Easterly Dimension _____ Northerly Dimension _____

Initial Vertical Dimension _____ Angle from North _____

Source_____:

PM_{10} _____ $PM_{2.5}$ _____ NO_x _____ SO_2 _____ CO_____ VOC _____

Toxic(s) (Please List):_____

Source Height _____ Easterly Dimension _____ Northerly Dimension _____

Initial Vertical Dimension _____ Angle from North _____

5. Volume Source Parameters (please include for each volume source modeled). List the **Maximum** Emissions Rate(s) for each pollutant.

Source Space Heaters South - Insignificant:

PM_{10} 7.69 E-3 $PM_{2.5}$ _____ NO_x 0.101 SO_2 6.07 E-4 CO 8.5 E-2 VOC _____

Toxic(s) (Please List): Arsenic (2.14 E-7); Cadmium (1.17 E-6); HCOH (8.0 E-5); Nickel (2.24 E-6)

Source Height 25 Initial Horizontal Dimension 30.48 m

Initial Vertical Dimension 5.58 m

Source Space Heaters East - Insignificant:

PM_{10} 0.11 $PM_{2.5}$ _____ NO_x 1.50 SO_2 9.0 E-3 CO 1.26 VOC _____

Toxic(s) (Please List): Arsenic (3.17 E-6); Cadmium (1.74 E-5); HOCH (1.18 E-3); Nickel (3.32 E-5)

Source Height 25 Initial Horizontal Dimension 30.48 m

Initial Vertical Dimension 5.58 m

Source Space Heaters North - Insignificant:

PM_{10} 6.10 E-2 $PM_{2.5}$ _____ NO_x 0.8 SO_2 4.81 E-3 CO 0.67 VOC _____

Toxic(s) (Please List): Arsenic (1.7 E-6); Cadmium (9.28 E-6); HCOH (6.36 E-4); Nickel (1.78 E-5)

Source Height 25 Initial Horizontal Dimension 30.48 m

Initial Vertical Dimension 5.58 m

6. Structure Parameters: **(Applies to any and all structures within the property boundary(ies) as well as nearby structures that may influence the dispersion of pollutants emitted by the source(s))**

Building Building 1:

Building Tier #1 Height: 22 ft Building Tier #1 Length: 173 ft Building Tier #1 Width: 77 ft

Building Tier #2 Height: _____ Building Tier #2 Length: _____ Building Tier #2 Width: _____

Building Tier #3 Height: _____ Building Tier #3 Length: _____ Building Tier #3 Width: _____

Building Building 2:

Building Tier #1 Height: 22 ft Building Tier #1 Length: 26 ft Building Tier #1 Width: 50 ft

Building Tier #2 Height: _____ Building Tier #2 Length: _____ Building Tier #2 Width: _____

Building Tier #3 Height: _____ Building Tier #3 Length: _____ Building Tier #3 Width: _____

Building Building 3:

Building Tier #1 Height: 22 ft Building Tier #1 Length: 820 ft Building Tier #1 Width: 420 ft

Building Tier #2 Height: _____ Building Tier #2 Length: _____ Building Tier #2 Width: _____

Building Tier #3 Height: _____ Building Tier #3 Length: _____ Building Tier #3 Width: _____

Building Building 4-5, 7-14:

Building Tier #1 Height: 64 ft Building Tier #1 Length: circular Building Tier #1 Width: 420 ft

Building Tier #2 Height: _____ Building Tier #2 Length: _____ Building Tier #2 Width: _____

Building Tier #3 Height: _____ Building Tier #3 Length: _____ Building Tier #3 Width: _____

Tank #6
Tank Height 40 ft
Tank Diameter _____

Tank _____
Tank Height _____
Tank Diameter _____

Tank _____
Tank Height _____
Tank Diameter _____

Tank _____
Tank Height _____
Tank Diameter _____

6. Structure Parameters: **(Applies to any and all structures within the property boundary(ies) as well as nearby structures that may influence the dispersion of pollutants emitted by the source(s))**

Building Building 15:

Building Tier #1 Height: 20.5 ft Building Tier #1 Length: 312 ft Building Tier #1 Width: 55 ft

Building Tier #2 Height: _____ Building Tier #2 Length: _____ Building Tier #2 Width: _____

Building Tier #3 Height: _____ Building Tier #3 Length: _____ Building Tier #3 Width: _____

Building Building 16:

Building Tier #1 Height: 20.5 ft Building Tier #1 Length: 312 ft Building Tier #1 Width: 55 ft

Building Tier #2 Height: _____ Building Tier #2 Length: _____ Building Tier #2 Width: _____

Building Tier #3 Height: _____ Building Tier #3 Length: _____ Building Tier #3 Width: _____

Building Building 18:

Building Tier #1 Height: 21 ft Building Tier #1 Length: 200 ft Building Tier #1 Width: 150 ft

Building Tier #2 Height: _____ Building Tier #2 Length: _____ Building Tier #2 Width: _____

Building Tier #3 Height: _____ Building Tier #3 Length: _____ Building Tier #3 Width: _____

Building Building 19:

Building Tier #1 Height: 24 ft Building Tier #1 Length: 100 ft Building Tier #1 Width: 70 ft

Building Tier #2 Height: _____ Building Tier #2 Length: _____ Building Tier #2 Width: _____

Building Tier #3 Height: _____ Building Tier #3 Length: _____ Building Tier #3 Width: _____

Tank _____
Tank Height _____
Tank Diameter _____

Tank _____
Tank Height _____
Tank Diameter _____

Tank _____
Tank Height _____
Tank Diameter _____

Tank _____ Tank Height _____ Tank Diameter _____

6. Structure Parameters: **(Applies to any and all structures within the property boundary(ies) as well as nearby structures that may influence the dispersion of pollutants emitted by the source(s))**

Building Building 20:

Building Tier #1 Height: 22 ft Building Tier #1 Length: 224 ft Building Tier #1 Width: 122 ft

Building Tier #2 Height: _____ Building Tier #2 Length: _____ Building Tier #2 Width: _____

Building Tier #3 Height: _____ Building Tier #3 Length: _____ Building Tier #3 Width: _____

Building _____:

Building Tier #1 Height: _____ Building Tier #1 Length: _____ Building Tier #1 Width: _____

Building Tier #2 Height: _____ Building Tier #2 Length: _____ Building Tier #2 Width: _____

Building Tier #3 Height: _____ Building Tier #3 Length: _____ Building Tier #3 Width: _____

Building _____:

Building Tier #1 Height: _____ Building Tier #1 Length: _____ Building Tier #1 Width: _____

Building Tier #2 Height: _____ Building Tier #2 Length: _____ Building Tier #2 Width: _____

Building Tier #3 Height: _____ Building Tier #3 Length: _____ Building Tier #3 Width: _____

Building _____:

Building Tier #1 Height: _____ Building Tier #1 Length: _____ Building Tier #1 Width: _____

Building Tier #2 Height: _____ Building Tier #2 Length: _____ Building Tier #2 Width: _____

Building Tier #3 Height: _____ Building Tier #3 Length: _____ Building Tier #3 Width: _____

Tank Building 21
Tank Height 22 ft
Tank Diameter 15 ft

Tank _____
Tank Height _____
Tank Diameter _____

Tank _____
Tank Height _____
Tank Diameter _____

Tank _____ Tank Height _____ Tank Diameter _____

7. Scaled Plot Plan Showing: (Make sure that all of the buildings and tanks shown on the scaled plot plan are also listed in section 6.)

Emission Release Locations X Buildings X
(On site and neighboring)
Tanks X
(On site and neighboring)

Property Boundary(ies) X Potential Co-contributor(s) NA

Sensitive Receptors X

Note: Sensitive receptor is defined in IDAPA 58.01.01.007.10 as any residence, building or location occupied or frequented by persons who, due to age, infirmity or health based criteria, may be more susceptible to the deleterious effects of a toxic air pollutant than the general population including, but not limited to, elementary and secondary schools, day care centers, playgrounds and parks, hospitals, clinics, and nursing homes.

8. Topographic Map Showing:

Source Location(s) X Building NA (On site and neighboring) Tanks NA (On site and neighboring)

Property Boundary(ies) X Model Receptors NA Maximum Impact Locations X

9. Meteorology Used (upper air and surface data):

On Site X

A quality control and quality assurance analysis, consistent with EPA guidelines, should be included for any on site data used other than that supplied by the National Weather Service (NWS). Contact DEQ regarding the adequacy of this data before use.

NWS Data Representative of the Site NA

Screening (Worst Case) Data NA
Use DEQ approved Screening Met. data

10. Urban _____ Rural X (DEQ can be contacted for further guidance on source classification)

Justification:

Review of 1991 serial photography, a 3-kilometer circle centered at the site, shows land use is less than 50% for I1, I2, C1, R2 or R3 type development.

Completeness Determination Questions:

- Was a modeling protocol approved by DEQ prior to permit application? Negotiating a modeling protocol with DEQ assures the applicant that their modeling approach will be accepted. YES
- Is a justification given explaining why a particular dispersion model was used? YES
- Did you document and justify input parameters and model settings (please include written justification)? YES
- Were grid receptors placed 100 to 500 m apart for the initial modeling analysis in order to find the area of maximum impact? YES
- Were grid receptors placed 25 to 50 m apart in the area of maximum impact? YES
- What ambient air quality standards apply? (i.e. NAAQS, significance standards, AAC, AACC, PSD increment standards) NAAQS, AACC
- Were DEQ approved background concentrations included in the modeling analysis (attainment and unclassified areas only)? YES

Considerations for major pollution sources and sources subject to PSD regulations:

- Was DEQ contacted regarding the need for (and quality control of) preconstruction monitoring data? YES
- Was a visibility analysis performed? NO
- Was the area of significant impact documented? YES

- Were impacts included (on disk) at all integral UTM coordinates within the significant impact area? YES

- If a major facility (as defined in IDAPA 58.01.01.006.55), was cumulative increment consumption analyzed? NA

Signature of modeler (please print and sign name) _____

_____

Telephone Number (801) 943-4144

_____

Name of DEQ Modeling Contact Mary Anderson

Telephone Number (208) 373-0502

Appendix B

Site Maps

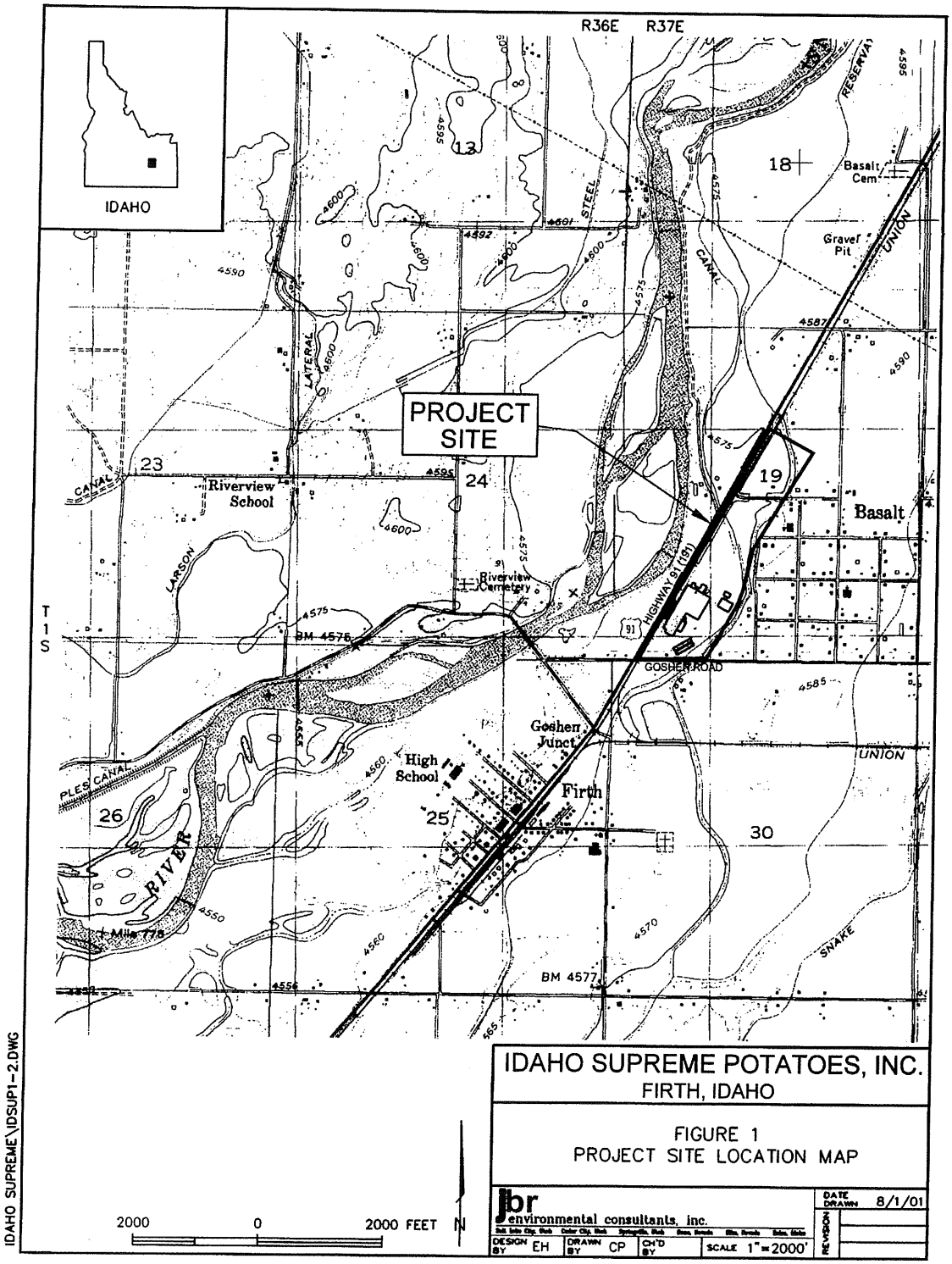

Figure 8-1 Project Site Location Map

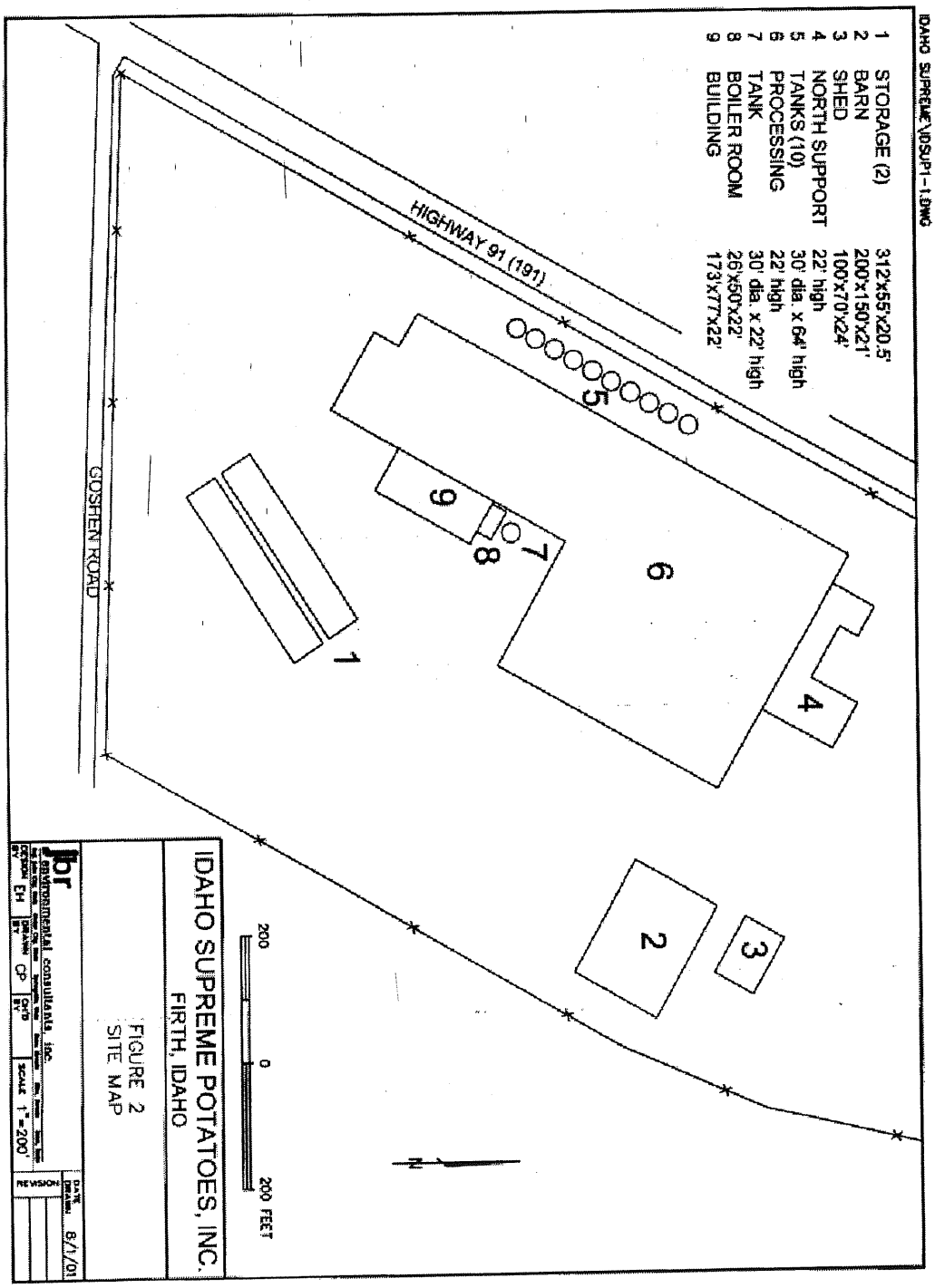

Figure 8-2 Site Map